

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference BL055-GN019W	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2007/021035	International filing date (<i>day/month/year</i>) 27 September 2007 (27.09.2007)	Priority date (<i>day/month/year</i>) 27 September 2006 (27.09.2006)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant REED, Mark, William			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input checked="" type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p> <p>Form PCT/IB/373 (January 2004)</p>	<p>Date of issuance of this report 31 March 2009 (31.03.2009)</p> <p>Authorized officer Athina Nickitas-Etienne</p> <p>e-mail: pi04.pct@wipo.int</p>
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
RYAN A. WILLIS
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **01 JUL 2008**

FOR FURTHER ACTION

See paragraph 2 below

Applicant's or agent's file reference

BL055-GN019W

International application No.

PCT/US07/21035

International filing date (day/month/year)

27 September 2007 (27.09.2007)

Priority date (day/month/year)

27 September 2006 (27.09.2006)

International Patent Classification (IPC) or both national classification and IPC

IPC: G06F 17/30(2006.01)

USPC: 707/2,3,5,205;711/154

Applicant

REED, MARK WILLIAM

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

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Facsimile No. (571) 273-3201

Date of completion of this opinion

21 May 2008 (21.05.2008)

Authorized officer

Fred I. Ehichioya

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Form PCT/ISA/237 (cover sheet) (April 2007)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US07/21035

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☐ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

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Box No. II Priority

1. ☐ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims NONE YES
Claims 1 - 23 NO

Inventive step (IS)

Claims NONE YES
Claims 1 - 23 NO

Industrial applicability (IA)

Claims NONE YES
Claims 1 - 23 NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE
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Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

Claims 1 – 6 and 16 – 20 do not meet an inventive step under PCT Article 33(3) as being obvious over U.S. Pub. No. 20060173837 issued to Berstis et al (hereinafter “Berstis”) in view of U.S. Patent No. 6,928,526 issued to Zhu et al (hereinafter “Zhu”).

Regarding claim 1, Berstis discloses a computer implemented method for performing ad-hoc analysis, the method comprising the steps of:

generating a text index of a plurality of textual information items (see page 5, [0039]: “the indexer module 310 may analyze the content of the sites and/or documents to create an index for the words contained in each” – words are interpreted as information items);

searching the text index using one or more search queries, the searching step producing search results including one or more textual information items matching the search query (see page 5, [0039]: “the search algorithm module 308 may search the index created by the indexer module 310 to determine the items (and the ranking of items) in the search result”);

compiling results of the text index search into aggregate information related to characteristics of the search results from the metadata items associated with each of the one or more textual information items in the search results (see page 3, [0029]: “A search engine server 106 may receive aggregated document utilization information from an aggregator server 104 to be used or supplement search results for the user” – though Berstis does not explicitly state metadata; Berstis discloses on page 4, [0031] “a document author, document owner as metadata. This corresponds to applicant’s definition of metadata on page 7, [0031] of the specification); and

reporting the aggregate information (see page 7, [0050]: “an aggregator server 104 may transmit the aggregated document utilization information to a search engine server 106 via network 120 at element 514 for use in responding to user search requests”).

Berstis does not explicitly disclose the metadata lookup structure as claimed.

Zhu discloses generating a metadata lookup structure based, at least in part, on the text index, the metadata lookup structure including one or more metadata items associated with each of the textual information items (see column 4, lines 20 – 24: “segment metadata index” is interpreted as metadata lookup structure; “segment metadata index provides a way to quickly lookup the storage location of segments”. As shown in column 2, line 65 – column 3, line 1, segments/blocks are data streams/information).

It would have been obvious to one of ordinary skill at the data processing art at the time of present invention to combine the cited references because Zhu’s teaching of metadata lookup structure would have allowed Berstis’ system to eliminate redundant copying of identical data during a backup operation as suggested by Zhu at column 2, lines 49 – 51.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Regarding claim 2, Zhu discloses the method of claim 1, further comprising the step of: prior to generating the text index, accessing a plurality of information sources for a plurality of textual information items (see column 3, lines 59 – 61: *"the lookup is done in segment database to confirm whether the segment has been stored previously"*).

Regarding claim 3, Zhu discloses the method of claim 1, wherein the step of generating a metadata lookup structure based, at least in part, on the text index includes the steps of:

generating a plurality of metadata IDs, each metadata ID associated with at least a type of metadata (see column 7, lines 22 – 24: *"sequence IDs are interpreted as metadata IDs"; sequence IDs are also segment IDs"*);

analyzing each textual information item to determine which metadata ID(s) are associated with the respective textual information item (see column 2, lines 58 – 60: *"metadata information about segments that are likely to be encountered soon are stored in a metadata cache and used in the preliminary check" – Checking is interpreted as analyzing*); and

mapping each textual information item with the respective metadata ID(s) determined for it in the analyzing step (see column 7, lines 44 – 45: *"a segment ID is generated for a data segment" – as shown above segment ID is also a metadata ID and data segment are interpreted as textual information*).

Regarding claim 4, Zhu discloses the method of claim 1, wherein the step of generating a metadata lookup structure based, at least in part, on the text index includes the steps of:

generating one or more metadata items associated with the textual information

items (see column 4, lines 14 – 16: *"data segments and their associated metadata are stored in a segment database 204" – data segments are interpreted as textual information*);

determining a quantity of the one or more metadata items (see column 5, lines 31 – 33: *"very large number of segment ID's are stored in the metadata index" – segment ID's are interpreted as metadata items*); and

dynamically allocating a portion of a computer memory component based, at least in part, on the determined quantity (see column 4, lines 36 – 40: *"8 MB is the portion of the computer memory that is dynamically allocated"*).

Regarding claim 5, Zhu discloses the method of claim 1, wherein the step of generating a metadata lookup structure based, at least in part, on the text index includes the steps of:

generating one or more metadata items associated with the textual information items (see column 4, lines 14 – 16: *"data segments and their associated metadata are stored in a segment database 204" – data segments are interpreted as textual information*), wherein the number of metadata items generated is not the same for all of the textual information items (see column 5, lines 64 – 66: *"Different types of segment information are stored in cache 203 in various embodiments, including segment ID's, segment data, segment metadata, or combinations thereof"*);

determining a quantity of the one or more metadata items (see column 5, lines 31 – 33: *"very large number of segment ID's are stored in the metadata index" – segment ID's are interpreted as metadata items*); and

dynamically allocating a portion of a computer memory component based, at least in part, on the determined quantity (see column 4, lines 36 – 40: *"8 MB is the portion of the computer memory that is dynamically allocated"*).

Regarding claim 6, Bertsis discloses the method of claim 1, wherein the one or more metadata items includes at least one of date information, link information, author information (*Bertsis discloses on page 4, [0031] "a document author, document owner as metadata. This corresponds to applicant's definition of metadata on page 7, [0031] of the specification*), keyword information, sentiment information, demographic information, entity information, and language information.

Regarding claim 16, Bertsis discloses a system for performing ad-hoc analysis, comprising:

a computer server having access to one or more information sources, the one or more information sources including a plurality of textual information items (see Fig. 1 step 106 and page 2, [0029]: *Server 106 has access to Network information (fig.1 step 130) and can also transmit search results to a user*); and

a user computer device linked via one or more data links to the computer server, the user computer device including software configured to perform the steps of (Fig. 1 step 108 is a user computer linked to the network):

generating a text index of the textual information items (see page 5, [0039]: *"the indexer module 310 may analyze the content of the sites and/or documents to create an index for the words contained in each" – words are interpreted as information items*);

searching the text index using one or more search queries, the searching step producing search results including one or more textual information items matching the search query (see page 5, [0039]: *"the search algorithm module 308 may search the index created by the indexer module 310 to determine the items (and the ranking of items) in the search result"*);

compiling results of the text index search into aggregate information related to characteristics of the search results from the metadata items associated with each of the one or more textual information items in the search results (see page 3, [0029]: *"A search engine server 106 may receive aggregated document utilization information from an aggregator server 104 to be used or supplement search results for the user" – though Bertsis does not explicitly state metadata; Bertsis discloses on page 4, [0031] "a document author, document owner as metadata. This corresponds to applicant's definition of metadata on page 7, [0031] of the specification"*); and

reporting the aggregate information (see page 7, [0050]: *"an aggregator server 104 may transmit the aggregated document utilization information to a search engine server 106 via network 120 at element 514 for use in responding to user search requests"*).

Bertsis does not explicitly disclose the metadata lookup structure as claimed.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Zhu discloses generating a metadata lookup structure based, at least in part, on the text index, the metadata lookup structure including one or more metadata items associated with each of the textual information items (see column 4, lines 20 – 24: *"segment metadata index" is interpreted as metadata lookup structure; "segment metadata index provides a way to quickly lookup the storage location of segments". As shown in column 2, line 65 – column 3, line 1, segments/blocks are data streams/information*).

It would have been obvious to one of ordinary skill at the data processing art at the time of present invention to combine the cited references because Zhu's teaching of metadata lookup structure would have allowed Berstis' system to eliminate redundant copying of identical data during a backup operation as suggested by Zhu at column 2, lines 49 – 51.

Regarding claim 17, Zhu discloses the system of claim 16, wherein the step of generating a metadata lookup structure based, at least in part, on the text index includes the steps of:

- generating a plurality of metadata IDs, each metadata ID associated with at least a type of metadata (see column 7, lines 22 – 24: *"sequence IDs are interpreted as metadata IDs"; sequence IDs are also segment IDs;*
- analyzing each textual information item to determine which metadata ID(s) are associated with the respective textual information item (see column 2, lines 58 – 60: *"metadata information about segments that are likely to be encountered soon are stored in a metadata cache and used in the preliminary check" – Checking is interpreted as analyzing;* and
- mapping each textual information item with the respective metadata ID(s) determined for it in the analyzing step (see column 7, lines 44 – 45: *"a segment ID is generated for a data segment" – as shown above segment ID is also a metadata ID and data segment are interpreted as textual information*).

Regarding claim 18, Zhu discloses the system of claim 16, wherein the step of generating a metadata lookup structure based, at least in part, on the text index includes the steps of:

- generating one or more metadata items associated with the textual information items (see column 4, lines 14 – 16: *"data segments and their associated metadata are stored in a segment database 204" – data segments are interpreted as textual information;*
- determining a quantity of the one or more metadata items (see column 5, lines 31 – 33: *"very large number of segment ID's are stored in the metadata index" – segment ID's are interpreted as metadata items;* and
- dynamically allocating a portion of a computer memory component based, at least in part, on the determined quantity (see column 4, lines 36 – 40: *"8 MB is the portion of the computer memory that is dynamically allocated"*).

Regarding claim 19, Zhu discloses the system of claim 16, wherein the step of generating a metadata lookup structure based, at least in part, on the text index includes the steps of:

- generating one or more metadata items associated with the textual information items (see column 4, lines 14 – 16: *"data segments and their associated metadata are stored in a segment database 204" – data segments are interpreted as textual information*), wherein the number of metadata items generated is not the same for all of the textual information items (see column 5, lines 64 – 66: *"Different types of segment information are stored in cache 203 in various embodiments, including segment ID's, segment data, segment metadata, or combinations thereof"*);
- determining a quantity of the one or more metadata items (see column 5, lines 31 – 33: *"very large number of segment ID's are stored in the metadata index" – segment ID's are interpreted as metadata items;* and
- dynamically allocating a portion of a computer memory component based, at least in part, on the determined quantity (see column 4, lines 36 – 40: *"8 MB is the portion of the computer memory that is dynamically allocated"*).

Regarding claim 20, Berstis discloses the system of claim 16, wherein the one or more metadata items includes at least one of data information, link information, author information (Berstis discloses on page 4, [0031] *"a document author, document owner as metadata. This corresponds to applicant's definition of metadata on page 7, [0031] of the specification*), keyword information, sentiment information, demographic information, entity information, and language information.

Claims 7 – 13 and 21 do not meet an inventive step under PCT Article 33(3) as being obvious over Berstis in view of Zhu and further in view of U.S. Pub. No. 2006/0041605 issued to King et al (hereinafter "King").

Regarding claim 7, Berstis and Zhu disclose the claimed subject matter as discussed in claim 6. Berstis or Zhu does not explicitly disclose uniform resource locator as claimed.

King discloses the method of claim 6, wherein the link information includes a Uniform Resource Locator (see page 28, [0517]: *"a Uniform Resource Locator or other link to content of a network"*).

It would have been obvious to one of ordinary skill at the data processing art at the time of present invention to combine the cited references because King's teaching of URL would have allowed Berstis and Zhu's system to give users variety of options in navigating the web. Uniform Resources Locators or links are short route to get to desired web pages.

Regarding claim 8, King discloses the method of claim 6, wherein the demographic information is generated and includes at least one of age and gender of a text item author (see page 30, [0531]: *"King discloses similar demographic group such as age"*).

Regarding claim 9, King discloses the method of claim 6, wherein the language information includes one or more language specific annotation (see page 24, [0465]: *"Scanning a Spanish word, for example, might cause the word to be read aloud in Spanish along with its definition in English"*).

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Regarding claim 10, King discloses the method of claim 9, wherein the language specific annotation is provided by the textual information items (see page 24, [0467]: *"The database includes a foreign language dictionary, thesaurus, and/or multimedia files (sound, graphics, etc.). In one embodiment, the system compares the scanned text with the resources in its database to identify the scanned word"*).

Regarding claim 11, King discloses the method of claim 9, wherein the language specific annotation is determined by analyzing the textual information items (see page 19, [0377] – [0378]: *Analysis of users ... model of the user's interest and activities*).

Regarding claim 12, King discloses the method of claim 1, wherein the textual information items include electronic data from one or more of Internet message boards, blogs and news groups (see page 31, [0536]: *"bulletin board"* is interpreted as *"Internet message board"*).

Regarding claim 13, King discloses the method of claim 1, wherein the aggregate information includes at least one of date information, link information, author information, keyword information, sentiment information, demographic information, entity information, and language information pertaining to the search results (see page 32, [0548]: *"document metadata (data about documents in aggregate), document specific data (e.g., region definitions, layout, author, publisher, etc.), keyword definitions"*).

Regarding claim 21, King discloses the system of claim 16, wherein the aggregate information includes at least one of date information, link information, author information, keyword information, sentiment information, demographic information, entity information, and language information pertaining to the search results (see page 32, [0548]: *"document metadata (data about documents in aggregate), document specific data (e.g., region definitions, layout, author, publisher, etc.), keyword definitions"*).

Claims 14, 15, 22 and 23 do not meet an inventive step under PCT Article 33(3) as being obvious over Berstis in view of Zhu and further in view of U.S. Pub. No. 2007/0027840 issued to Cowling et al (hereinafter "Cowling").

Regarding claim 14, Berstis and Zhu disclose the claimed subject matter as discussed in claim 1, Berstis or Zhu does not explicitly disclose predetermined time period as claimed.

Cowling discloses the method of claim 1, wherein the text index is updated after a predetermined time period (see page 6, [0058]: *"When the queue contains updates (310), these are taken and the respective sub-index is updated (315, 320). The method (300) then determines whether it has been a predetermined period (5 minutes) since the last merge (325)"*).

It would have been obvious to one of ordinary skill at the data processing art at the time of present invention to combine the cited references because Cowling's teaching of predetermined time period would have allowed Berstis and Zhu's system to stop the indexing process for all of the sub-indexes, merge the various sub-indexes in order to update the main searchable index for the data category. The process allows current data to be retrieved.

Regarding claim 15, Cowling discloses the method of claim 14, wherein the predetermined time period is between five and fifteen minutes see page 6, [0058]: *"When the queue contains updates (310), these are taken and the respective sub-index is updated (315, 320). The method (300) then determines whether it has been a predetermined period (5 minutes) since the last merge (325)"*).

Regarding claim 22, Cowling discloses the system of claim 16, wherein the text index is updated after a predetermined time period see page 6, [0058]: *"When the queue contains updates (310), these are taken and the respective sub-index is updated (315, 320). The method (300) then determines whether it has been a predetermined period (5 minutes) since the last merge (325)"*).

Regarding claim 23, Cowling discloses the system of claim 22, wherein the predetermined time period is between five and fifteen minutes see page 6, [0058]: *"When the queue contains updates (310), these are taken and the respective sub-index is updated (315, 320). The method (300) then determines whether it has been a predetermined period (5 minutes) since the last merge (325)"*).